Final New Syllabus
Paper - 5
Strategic Cost Management & Performance Evaluation

Roll No. ....

MAY 2019

Total No. of Questions – **6**

Total No. of Printed Pages – **16**

Time Allowed – **3 Hours**

Maximum Marks – **100**

TMS2

Answer to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate who has not opted for Hindi Medium, his/her answers in Hindi will not be valued.

Question No. **1** is compulsory.

Candidates are also required to answer any **four** questions from the remaining **five** questions.

Working notes should form part of the respective answers.

Marks

1. Audio Tech is a company that designs, develops and sells audio equipments. Audio Tech is best known for its home audio systems and speakers, noise cancelling headphones, professional audio systems and automobile audio systems.

Audio Tech sells audio equipments to consumers through its large network of retail outlets in its home country and via the company's website.

Audio Tech purchases the materials and components that it needs to manufacture audio equipments from a number of different suppliers. All of the purchases are delivered to a company's godown at its factory and are held there until they are needed for production and assembling.

Finished products are transported from the factory to Audio Tech's retail outlets by company's own trucks. The trucks follow the same schedule each week irrespective of the load they are carrying. Audio equipments that are required for sale via the company's website are transported to Audio Tech's distribution centre.

The company believes that it can attract more customers by offering quality products at reasonable prices. Each unit is tested for quality with a real time analyzer ipad app and a calibrated microphone to measure how consistently each sound system reproduced various frequencies. A bass-test sweep tone allows checking how well the subwoofer managed low-end frequencies. Finally they drive each in cars briefly to see how sound quality changes while on the move.

The company aims to build customer loyalty also through high level of customer services and value chain analysis. The customers can return the product if quality specifications are not met. There is a separate department to handle such complaints.

Audio Tech had implemented Balanced scorecard as a performance measurement and management system. Company has been doing great on financial parameters and customer satisfaction parameters. Market capitalization of the company has been increased considerably over the years.

Of late, the company has witnessed high employee turnover ratio. Though the company has a formal exit interview process for the resigning employees, the input received from these interviews is rarely considered in improving HR practices. One of the common feedbacks from employees was that working hours are too long and they have to frequently work on weekends also and there is so much pressure to improve customer service without adequate support of system and processes. Also the truck drivers have been on strike thrice in the last one year demanding better pay, retirement benefits and good working conditions.

Audio Tech is keen to address the above issues and recently held a meeting to discuss the performance of the company. The Management Accountant suggested to the Managing Director to use an alternative performance measurement mechanism which considers all the stakeholders instead of just shareholders and customers. The Managing Director is skeptical of the Management Accountant's suggestions and is unclear as to whether they are suitable for the company or not. Therefore, the company seeks your assistance.

Required :

(i) Identify and explain the various primary activities of Audio Tech in its value chain. Also suggest, if there is any scope for cost reduction in these activities. **10**

Marks

(ii) Recommend an alternative performance measurement mechanism which considers all stakeholders instead of just shareholders and customers. Also indicate the performance measures as applicable to the situations of Audio Tech in the alternative mechanism suggested by you. **10**

2. Amber Ltd. is a leading company in the Footwear Industry. The company has four factories in different locations with state of the art equipments. Due to competition in the market, company is continually reviewing its product range and enhancing its existing products by developing new models to satisfy the demands of its customers.

The company currently has a production facility which has a capacity of 3500 standard hours per week.

Product 'Comfort' was introduced to the market six months ago and is now about to enter the maturity stage of its life cycle.

However, research by the marketing department indicates that demand of the product 'Comfort' in the market is price sensitive. The likely market responses are as follows :

Selling price per unit (₹)	1750	1600	1525	1450	1300
Sales demand per week (units)	550	725	1000	1150	1200

The variable cost per unit of manufacturing 'Comfort' is ₹ 750.

Standard hours used to manufacture one unit is 2 hours.

Marks

Product 'Sports' was introduced to the market two months ago using a penetration pricing policy and is now about to enter its growth stage. Each unit has a variable cost of ₹ 545 and takes 2.50 standard hours to produce. Market research has indicated that there is a linear relationship between its selling price and the number of units demanded, of the form $P = a - bx$. At a selling price of ₹ 1000 per unit demand is expected to be 1000 units per week. For every ₹ 100 increase in selling price the weekly demand will reduce by 200 units and for every ₹ 100 decrease in selling price the weekly demand will increase by 200 units.

Product 'Ethnic' is currently being developed and which is about to be launched in the market. This is a highly innovative designer product which the company believes that it will have a revolutionary impact on the market and consumer behaviour. The company has decided to use a market skimming approach to pricing this product during its introduction stage.

Required :

(a) (i) Advise which of the above five selling prices should be charged for product 'Comfort', in order to maximize its contribution during its maturity stage. **3**

(ii) Calculate the number of units to be produced of product 'Sports' in order to utilize all of the spare capacity from your answer to (i) above and the selling price per unit of product 'Sports' during its growth stage. **2+3 =5**

Marks

(b) Compare penetration and skimming pricing strategies during the introduction stage, using product 'Ethnic' to illustrate your answer. 4

(c) Explain with reasons, for each of the stages of 'Ethnic's product life cycle, the changes that would be expected in the 4+4 =8

(i) average unit production cost

(ii) unit selling price

3. Excel Ltd. is the leading manufacturer and exporter of high quality leather products – Product A and Product B.

Selling price per unit of Product A and Product B is ₹ 620 and ₹ 420 respectively.

Both the products pass through three processes – Tanning, Dyeing and Finishing during manufacturing process. Allocation of costs per unit of leather products manufactured among the processes are given below :

Particulars	Tanning	Dyeing	Finishing	Total
Direct Materials per unit	140	180	140	460
Direct Labour per unit	90	120	90	300
Cost allocation to Product A	70%	50%	70%	
Cost allocation to Product B	30%	50%	30%	

General overheads per unit of leather products manufactured are ₹ 230 which is allocated equally between Product A and Product B. Above cost allocation is the basis for the decisions regarding pricing of the products.

In this Industry, all the major production processes have environmental impact at all stages of the process, including generation of waste, emission of harmful gases, noise pollution, water contamination etc.

The management of the company is worried about the above environmental impact and has taken initiative to preserve the environment like – research and development activities aimed at reducing pollution level, planting trees, treatment of harmful gases and airborne emissions, wastewater treatment etc.

The management of the company desires to adopt Environmental Management Accounting as a part of strategic decision making process. Pricing of products should also factor in environmental cost generated by each product.

General overheads per unit of leather products manufactured are ₹ 230 which includes :

Treatment cost of harmful gases	₹ 80
Wastewater treatment cost	₹ 100
Cost of planting of trees	₹ 20

Marks

Process wise information related to generation of wastewater and harmful gases is given as below :

	Tanning	Dyeing	Finishing	Total
Wastewater generated (litres per week)	900	600	0	1500
Emission of harmful gases (cc per week)	400	300	100	800
Cost allocation to Product A	70%	50%	70%	
Cost allocation to Product B	30%	50%	30%	

The remaining overheads cost and cost of planting trees can be allocated equally between Product A and Product B.

Required :

(a) Calculate the product wise profitability based on the original cost allocation. 2

(b) Recalculate the product wise profitability based on activity based costing (Environment driven costs). 5

(c) Analyze the difference in product profitability as per both the methods. 2

(d) Recommend and explain the four management accounting techniques for the identification and allocation of environmental costs. 8

(e) State why the management of environmental costs is becoming increasingly important in organizations. Give reasons. 3

Marks

4. (a) GRV is a chemical processing company that produces sprays used by farmers to protect their crops. One of these sprays 'Agrofresh' is made by using either chemical A or chemical B. To produce one litre of Agrofresh spray they have the option to use either 12 litres of chemical A or 12 litres of chemical B. During the financial year, the purchase department of GRV has planned to use chemical B as it appeared that it would be the cheaper of the two and their plans were based on a cost of chemical B of ₹ 15 per litre.

Due to subsequent market movement during the year the actual prices changed and if the concerned department had purchased efficiently, the cost would have been

Chemical A	₹ 15.40 per litre
Chemical B	₹ 16.00 per litre

Production of Agrofresh spray was 1000 litres and the usage of chemical B was 12800 litres at a cost of ₹ 2,09,920.

You are the CEO of GRV and the Management Accountant has sent to you the following suggestions through e-mail :

"I feel that in our particular circumstances the traditional approach to variance analysis is of little use as for some of our products we can utilize one of several equally suitable chemicals and we always plan to use such chemical which will lead to cheapest production costs. However due to sharp market movements, we are frequently trapped by the sharp price changes which lead to the choice of expensive alternative at the end."

Marks

To check the reality in the content of the mail, your CEO asked you, the Cost Accountant of the company :

(i) to calculate the material variances for Agrofresh by using **6**

- Traditional Variance Analysis
- Planning and Operational Variances

(ii) to analyse how planning and operational variances approached the variances. **2**

(iii) to analyse how the advanced variances are useful to your organisation. **2**

(b) DK International is developing a new product. During its expected life, 16,000 units of the product will be sold for ₹ 102 per unit.

Production will be in batches of 1,000 units throughout the life of the product.

The direct labour cost is expected to reduce due to the effects of learning for the first eight batches produced. Thereafter, the direct labour cost will remain constant at the same cost per batch as in the 8th batch.

Marks

The direct labour cost of the first batch of 1,000 units is expected to be ₹ 55,000 and a 90% learning effect is expected to occur. The direct material and other non-labour related variable costs will be ₹ 50 per unit throughout the life of the product.

There are no fixed costs that are specific to the product.

The learning index for a 90% learning curve = – 0.152; $8^{-0.152} = 0.729$; $7^{-0.152} = 0.744$

Required :

(i) Calculate the expected direct labour cost of the 8th batch. **3**

(ii) Calculate the expected contribution to be earned from the product over its lifetime. **3**

(iii) Calculate the rate of learning required to achieve a lifetime product contribution of ₹ 5,00,000, assuming that a constant rate of learning applies throughout the product's life. **4**

5. (a) (i) Name any two competition-based pricing methods. **2**

Marks

(ii) Recommend the Pricing Strategy to be adopted with reference to the following situations. You are not required to explain the reasons for your answer. 1×8 =8

a. Star Coffee Shop follows the practice of keeping the price of its coffee or service artificially high in order to encourage favourable perceptions among buyers, based solely on the price.

b. Sky TV gave away their satellite dishes for free in order to set up a market for them.

c. Princeton Hotels Ltd. follows a competitive pricing method under which it tries to keep its price at an average level charged by the Industry.

d. Eddisson Enterprises has piled up stocks in large quantities and the market price has fallen.

e. Acqua LLP follows a new product pricing strategy through which company makes profitable sales by selling out few units.

f. X Ltd. produces Product X a revolutionary product and as a reward for innovation and for taking first initiative which pricing strategy should X Ltd. adopt ?

g. An established company has recently entered the stationery market segment and launched quality paper for printing at home and office.

h. D is a perishable item, with more than 80% of its shelf life is over.

Marks

(b) RK Ltd., which is producing a product, prepared a budget for the next year as follows :

Fixed Cost p.a. ₹ 12,60,000

Variable Cost p.u. ₹ 25

Production 180000 units

Selling price – Cost plus 25% mark-up on total budgeted cost

When these budgeted figures and the pricing approach were informed to the Marketing Manager, he came out with a remark that the demand for the product is more price sensitive and he expected the demand under various prices as given below :

Selling Price p.u. (₹)	36	38	40	42	44
Annual Demand (units)	174000	162000	150000	138000	125000

The Marketing Manager further informed that a wholesale dealer is ready to buy the entire production of the company at a price of ₹ 32 p.u. In that situation he expected a savings of ₹ 2 p.u. in the selling expenses which are a part in the above stated variable cost.

Required :

Evaluate the situation and advice the most profitable course of action. 10

Marks

6. (a) Raju is Chief Financial Officer of Millets. com, an internet company that enables customer to order for delivery of different millets by accessing its website. Raju is concerned with the efficiency and effectiveness of the financial function. He collects the following information for three finance activities in 2018. 2+4+4=10

Rate per unit of Cost Driver

Activity	Activity level	Cost Driver	Static Budget Amount ₹	Actual Amount ₹
Receivables	Output unit	Remittance	6.39	7.50
Payables	Batch	Invoices	29.00	28.00
Travel expenses	Batch	Travel claims	76.00	74.00

The output measure is the number of deliveries which is the same as the number of remittances. The following additional information are also given :

	Budgeted	Actual
Number of deliveries	10,00,000	9,48,000
Delivery Batch size	5	4.468
Travel expenses Batch size	500	501.587

Marks

Required :

Calculate the flexible budget variances for 2018 to :

(i) Receivable Activities 2

(ii) Payable Activities 4

(iii) Travel expense Activities 4

(Ignore fractions in all calculations)

(b) The information given below pertains to ABC Enterprises, a specialized car garage door installation company. ABC Enterprises use to get multiple service calls from the customers with variety of requirements. They may have to Install, Replace, Adjust or Lubricate some part or other to make the door functional. They work with 5 parts as given in the table, namely Door, Motor, Track, Trimmer and T-Lock.

	Parts	Type of Service				Total
		Install	Replace	Adjust	Lube	
1	Door	2	5	1	0	**8**
2	Motor	3	2	16	9	**30**
3	Track	5	0	6	6	**17**
4	Trimmer	14	6	0	0	**20**
5	T-Lock	5	0	1	0	**6**
6	Miscellaneous	0	2	1	1	**4**
	Total	**29**	**15**	**25**	**16**	**85**

Marks

Required :

(i) Using the above data, carry out a Pareto Analysis (80/20 rule) of Total Parts. 3

(ii) Using the same data carry out the second level Pareto Analysis on the type of services with respect to Motors only. 2

(iii) Give your recommendations on the basis of your calculations in (i) and (ii) above. 5

(Do calculations to two decimals only)

OR

State the business situations in which you recommend to apply Pareto Analysis. 5